

west virginia department of environmental protection

Office of Oil and Gas 601 57th Street SE Charleston, WV 25304 (304) 926-0450 (304) 926-0452 fax Earl Ray Tomblin, Governor Randy C. Huffman, Cabinet Secretary www.dep.wv.gov

December 04, 2013

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-1700638, issued to CHESAPEAKE APPALACHIA, L.L.C., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalities being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654

James Martin

Chief

Operator's Well No: 910160 (STARKEY, EALY A-160)

Farm Name: POST, MARY K.

API Well Number: 47-1700638

Permit Type: Plugging
Date Issued: 12/04/2013

Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

- 1. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
- 2. Well work activities shall not constitute a hazard to the safety of persons.

WW-4B Rev. 2/01

1) Date October 17	,	20 13
2) Operator's		-
Well No. 910160		
3) API Well No.	47 - 017	- 00638

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

	APPLICATION FOR A PERM	MIT TO PLUG AND ABANDON
4)	Well Type: Oil / Gas X / Liquid	d injection / Waste disposal /
-,		derground storage) Deep/ Shallow X
		,
5)	Location: Elevation 1165'	Watershed Upper Ohio South
٠,	District McClellan 05	County Doddridge 17 Quadrangle Centerpoint 286
6)	Well Operator Chesapeake Appalachia, LLC	7) Designated Agent Eric B. Gillespie
- 6	Address P.O. Box 1300	Address P.O. Box 6070
	Jane Lew, WV 26378	Charleston, WV 25301
8)	Oil and Gas Inspector to be notified	9) Plugging Contractor
- /	Name Doug Newlon	Name R & J Well Service
	Address 4060 Dutchman Road	Address P.O. Box 37
	Macfarlan, WV 26148	Hueysville, KY 41640
	MIRU construction equipment to BR&L (remove any tanks, separators, well lines, meter runs, RIH w/ sandline and tag PBTD of 2,169'. NOTE: If PBTD is not reached, SD and contact Eng TIH strapping 2 3/8" tubing to an estimated TD of 2,169 +/ 7. Load hole with 35 bbls of 6% 4400 cement plug), flush tubing with 8 bbls 6% gelled water. TOOH with 2 3/8" tubing to surf TIH strapping 2 3/8" tubing to an estimated TD of 1,215' +/ Pump 55 sks of Class A cement Pump 40 sks of Class A cement (100' cement plug), flush tubing with 2 bbls 6% gelled water. TOOH w/ tubing. Top off well with required Class A cement as needed. Install a 36 inch cas WV dates and WV API number. RDMO all service equipment providers and reclaim location to	gelled water or break surface with circulation. Pump 8 sks of Class A cement ace. RU Wireline and Shoot 4 ½" casing at 1,165' +/ Pull and laydown casing (100' cement plug), flush tubing with 4.3 bbls 6% gelled water. TOOH with 2 3/8" tubing to 619' TOOH with 2 3/8" tubing to 100'. Pump 26 sks of Class A cement (100' cement plug).
		REC: HER
		ZINCE OF CHARLES
	ification must be given to the district of k can commence.	il and gas inspector 24 hours before permitted
		V December of
Wor	k order approved by inspector	Date

PROCEDURE

8.

- Contact the WV State Inspector 48 hours prior to operations. 1.
- 2. Safety is the highest priority. Hold wellsite safety meetings prior to each significant operation. Review critical parameters and objectives as well as emergency action plans.
- MIRU construction equipment to BR&L (remove any tanks, separators, well lines, meter runs, exc.) 3.
- 4. MIRU service rig & needed BOP equipment. NOTE: Blow down well to pit or tank.
- RIH w/ sandline and tag PBTD of 2,169'. NOTE: If PBTD is not reached, SD and contact 5. Engineer.

Pump 8 sks of Class A cement (4002 cement plug), flush tubing with 8 bbls 6% gelled water

- TIH strapping 2 3/8" tubing to an estimated TD of 2,169 +/-. 6.
- 7. Load hole with 35 bbls of 6% gelled water or break surface with circulation. 150

9.

- TOOH with 2 3/8" tubing to surface.

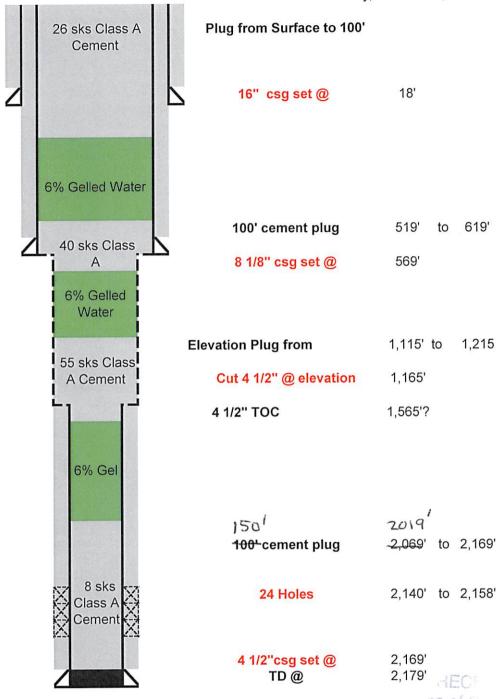
 RU Wireline and Shoot 4 ½" casing at 1,165" +/-. Pull and laydown casing.
- 11. TIH strapping 2 3/8" tubing to an estimated TD of 1,215' +/-.
- 12. Pump 55 sks of Class A cement (100' cement plug), flush tubing with 4.3 bbls 6% gelled water
- 13. TOOH with 2 3/8" tubing to 619'
- Pump 40 sks of Class A cement (100' cement plug), flush tubing with 2 bbls 6% gelled water
- 15. TOOH with 2 3/8" tubing to 100'
- 16. Pump 26 sks of Class A cement (100' cement plug). TOOH w/ tubing.
- 17. Top off well with required Class A cement as needed.
- Install a 36 inch casing monument w/ 2" vent. Install a Aluminum plat monument with ALL required WV dates and WV API number.
- 19. RDMO all service equipment providers and reclaim location to WV State requirements.

2019' Newbor Doughod 12013 OIL SHOW @ 2060-2069'
PLUG # 1 NEEDS TO BE FROM 2169'-

Starkey 1 - 910160 Plugging procedure (2).docx

Well ID Starkey 1 - 910160

Monday, October 14, 2013





Cement Perforated Zone 6% Gel SBP



WELL DATA

Location (Surface)	Lat. Long
Location (Surface)	Lat. Long.
TD	2,179'
PBTD	2,169'
Marker Joint	NA

CASING AND TUBULAR DATA

STRING	SIZE	WEIGHT/GRADE	DEPTH	THREAD	TOC
Surface	8 5/8"	NA	569'	NA	NA
Production	4 1/2"	NA	2,664'	NA	1,575
Tubing					

CAPACITIES

SIZE	WEIGHT	CAPACITY (GAL/FT.)	CAPACITY (BBL/FT.)
8 1/8"	NA#	2.2858	0.0544
4 1/2"	9.5#	0.6825	0.0162
2 3/8"	4.7 #	0.16239	0.00387
6 1/2"	OH	1.7238	0.0410

SIZE	WEIGHT	CAPACITY (CU FT/FT.)	CAPACITY (BBL/FT.)
8 1/8"	NA#	0.3056	0.0544
4 1/2"	9.5#	0.0912	0.0162
2 3/8"	4.7 #	0.02171	0.00387
6 1/2"	OH	0.2304	0.0410

WELLHEAD EQUIPMENT

COMPONENT	SIZE & RATING
Manufacturer	Larkin Screw On
Tubing Spool	
Casing Spool	
Bradenhead	

DRIVING DIRECTIONS

Interstate 79 to Clarksburg, turn west on Rt 50, go 32 miles to Sunnyside exit, turn left, go 1.8 mile, turn left on Oxford road (21), go 5.8 miles, turn left onto Sugar Run (19) at Oxford post office, go 1.0 mile, turn right onto location road. Well is on top of hill.

SCOPE OF OPERATION

- 1. Safety is the highest priority. Control costs and avoid unnecessary expenditures.
- 2. TOOH strapping rods and 2 3/8" tubing
- 3. TIH with 2 3/8" tubing to estimated TD of 2,169'
- 4. Pump required cement and gel plugs per WV DEP state requirements
- 5. Plat a well monument with WV State API number



STATE OF WEST VIRGINIA DEPARTMENT OF MINES

Quadrangle Centerpoint				15		
Permit No. Dod-638		WELL	RECORD		Oil or	Gas Well Gas
Company Allegheny Le	and & Mine	ral Co.		T	T	(KIND)
Address Clarksburg,			Casing and	Used in Drilling	Left in Well	Packers
Farm Starkey Hei			*			
Location (waters)			Size			
Well No. A-160		Elev 1165) 16	18'	181	Kind of Packer
District McClellan			13			Kind of Facker
The surface of tract is owned in		-				Size of_
			oute/ 81"	5691		Size oi
Mineral rights are owned by						D 41 4
			\	2179'	27.70	Depth set
Drilling commenced Dece					2179'	Perf. top. 2140
				 	1	Perf. top 2150
Drilling completed Janu					1	Perf. bottom 2158
Date ShotFrom	nT	0	Liners Used			Perf. top
With	No to				-	Perf. bottom
Open Flow /10ths Water				L		
/10ths Merc.				ENTED 41	u SIZE 604	_No. Ft. 1-7-62 Date
Volume Show only			KK Coment			Lime
Rock Pressure 265			Dowell Ser	rvice	U1u	h+166
Oil		_bbls., 1st 24 hrs	COAL WAS E	NCOUNTERE	D AT	FEETINCHES
WELL ACIDIZED						FEETINCHES
			FEE FEE	TINC	CHES	FEETINCHES
ROCK PRESSURE AFTER TR	REATMENT	675# 12				
Formation Color Color	Hard or Soft			5 bailers Oil, Gas or Water	Depth Drations	Remarks in Ha" casing 24 jets

EI.

Formation	Color	Hard or Soft	Top /5	Bottom	Oil, Gas or Water	Depth Found	Remarks
Slate and s Red Rock Slate & she Pink Rock Slate & she Sand Slate & she	lls lls lls lls lls		980 1035 1075 1115 1120 1135 1175 1285 1380 1380 14270 1537 1610	1035 1075 1115 1120 1130 1155 1205 1285 1300 1380 1425 1470 1537 1610	Water Salt y	1505- 1533	5 bailers per hour
Sand Slate Sand Slate Sand Slate Slate Lime Slate & she Slate Red Rock Slate Red Rock Lime Red Rock Slate Red Rock		Hard	1665 1677 1725 1738 1794 1800 1813 1870 1905 1913 1923 1952 1957 1968 2025	1677 1725 1738 1794 1800 1813 1870 1905 1913 1923 1952 1957 1968 2025 2075 2080	011 011	2060-2066 2087-2090	Show
Iime Sand Squaw sand Total depth Total depth	2169 g	after drill	2080 2092 2163 ing out ce	2092 2163 2179 2179 ment	G as Gas	2135 - 2145 2152	Show "
	27	3			1		-
			. •				

_ 0	1	2	3	Latitude 39 ° 25
-1 2 3 J. H.	HILL HRS	N3"2 W 255" N8" WO FORKS NORTH 280' N35.5"	3 3 5 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7	Latitude 39 ° 25 ' SAMUEL STOUT STARKEY HRS 78½ R. CURRY
Address CL Farm CL A Tract Well (Farm) Elevation (Sp Quadrangle C County DOD Engineer	LEGHEN ARKSB RISSA Acres 78 No. / Dirit Level) CENTERF DRIDGE Gegistration No.	STARK STARK Lease Serial 165 V POINT District M DA	(EY HRS. No. No. A-160 (A. SW 2 ¹ CLELLAN	STATE OF WEST VIRGINIA DEPARTMENT OF MINES OIL AND GAS DIVISION CHARLESTON WELL LOCATION MAP FILE NO

WW-4A Revised 6-07

1) Date:	October 17, 2013	
2) Operator's	s Well Number	
910160		

3) API Well No.: 47 -

017

00638

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Own	ner(s) to be served: (5)	(a) Coal Operator	
(a) Name	Mary K. Post	Name	
Address	PO Box 69	Address	
	Salem, WV 26426		
(b) Name		(b) Coal Owner(s)	with Declaration
Address			e Coal Company
			Consol Energy Drive
			sburg, PA 15317
(c) Name		Name	
Address		Address	
6) Inspector	Doug Newlon	(c) Coal Lessee wit	th Declaration
Address	4060 Dutchman Road	Name	
	Macfarlan, WV 26148	Address	
Telephone	304-932-8049		
well i (2) The p The reason However, you Take notice accompanyi Protection, the Applica	ts and the plugging work order; and blat (surveyor's map) showing the well location you received these documents is that you have right are not required to take any action at all. That under Chapter 22-6 of the West Virginia Cooking documents for a permit to plug and abandon a with respect to the well at the location described of	ghts regarding the application which the undersigned well operator process well with the Chief of the Office of the attached Application and defor certified mail or delivered by	ch are summarized in the instructions on the reverses side. Proposes to file or has filed this Notice and Application and a f Oil and Gas, West Virginia Department of Environmental picted on the attached Form WW-6. Copies of this Notice, hand to the person(s) named above (or by publication in
	W-II Ot	Change of Appelophia 110	
WEST		Chesapeake Appalachia LLC Dee Southall	
Notary	OFFICIAL SEAL By: Public, State of West Virginia Its:	Regulatory Analyst	
1 1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RITTANY R WOODY (Adduced	P.O. Box 1300	
	3302 Old Elkins Road Buckhannon, WV 26201	Jane Lew, wv 26378	
	mission expires November 27, 2022 Telephone	304-517-1416 EXT. 86024	ECEIVED
	Totophono		of Oil and Gas
Subscribed and My Commission	Brittany Russay	ay of Movember	Nov 25003 Notary Public
Oil and Gas Priva	cy Notice		nmen Fluidulion

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

WW-9 Rev. 5/08

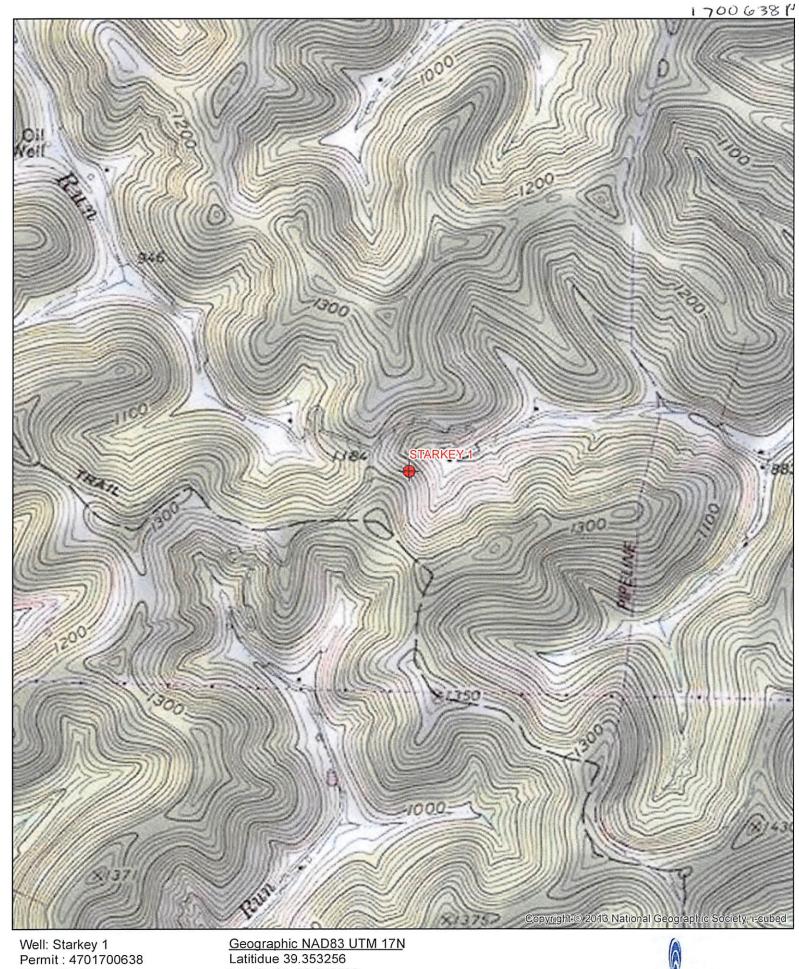
	1700638P	
Page	of)
API Number 47 - 017	- 00638	
Operator's Well No. 910160	5096	
A PROTECTION S	CK5000	
SISTRATION APPLICATI	ON FORM	

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM

GENERAL PERMIT FOR OIL A	ND GAS PIT WASTE DISCHARGE
Operator Name Chesapeake Appalachia, LLC	OP Code 494477557
Watershed_Upper Ohio South	Quadrangle Centerpoint
Elevation 1165' County Doddridge	District_McClellan
Description of anticipated Pit Waste: Water from plugging process	
Will a synthetic liner be used in the pit? yes ZOMIL.	DC 21.7
Reuse (at API Number at next anticipate XX Off Site Dispnosal (Supply form WW)	Number 2D0072539/2D0413175/2D0610306/2D0610317) ad well, API# will be included on the WR34/∨ permit addendum
Proposed Work For Which Pit Will Be Used: Drilling Workover Other (Explain	Swabbing X Plugging
on August 1, 2005, by the Office of Oil and Gas of the West Virgorovisions of the permit are enforceable by law. Violations of law or regulation can lead to enforcement action. I certify under penalty of law that I have personally application form and all attachments thereto and that, based	onditions of the GENERAL WATER POLLUTION PERMIT issued ginia Department of Environmental Protection. I understand that the any term or condition of the general permit and/or other applicable examined and am familiar with the information submitted on this on my inquiry of those individuals immediately responsible for ue, accurate, and complete. I am aware that there are significant ity of fine or imprisonment.
Subscribed and sworn before me this day of	vember, 20,13
Brittany R Ubody	Notory Public
My commission expires 1122	OFFICIAL SEAL Notary Public, State of West Virginia BRITTANY R WOODY 3302 Old Elkins Road Buckharnon, WV 26201 My commission expires November 27, 2022

L	EGEND
Property Boundary	Diversion Leader Land Land Land Land
Road = = = = = = = = = =	Spring -
Existing Fence — X — X — X —	Wet Spot
Planned Fence/_/_//	Drain Pipe with size in inches (2)
Stream 7	Waterway \longleftrightarrow
Open Ditch	Cross Drain 7/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1
Rock 685882	Artificial Filter Strip
North N	Pit; cut walls
Buildings	Pit: compacted fill walls
Water wells	Area for Land Application of Pit Waste
Drill site	
Proposed Revegetation Treatment: Acres Disturbed	Prevegetation pH
Lime as determined by pH test min. 2 Tons/acre or to correct to pH	
Fertilizer (10-20-20 or equivalent) 500 lbs/a	acre (500 lbs minimum)
MulchTons/ac	ere.
Seed	Mixtures
Area I	Area II
Seed Type lbs/acre	Seed Type lbs/acre
Orchard Grass 20	Orchard Grass 20
Red Top 15	Red Top 15
White Clover 15	White Clover 15
Attach:	
Drawing(s) of road, location,pit and proposed area for land appli	cation.
Photocopied section of involved 7.5' topographic sheet.	
Plan Approved by: Daughes Member	
Comments: 1N5/q11 E+5 to W	D. O. CON GENTEDA
Comments: /// 1/6// E-P 1 E C	U Wall (EGUIGHON)
Comments: 1N5/41/ E+3 to W	Of Oil and Cas
Comments:	O Map regulation Oil and Gas
Oil and Gas Inspector	Lay 25 2013
Title: Oil and Gas Inspector	Date: 11-21-2013



Well: Starkey 1 Permit: 4701700638 Quad: Smithburg District: McClellan County: Doddridge State: WV Geographic NAD83 UTM 17N Latitidue 39.353256 Longitude -80.645569 UTM NAD83 (Meters) 530534.49 E 4356041.47 N



API:47-017-00638

FARM NAME: Clarissa Starkey Hrs.



West Virginia Department of Environmental Protection Office of Oil and Gas

WELL LOCATION FORM: GPS

RESPONSIBLE PARTY NAME: Chesapeake Appalachia, LLC

WELL NO.: 910160

COUNTY: Doddridge DISTRICT: McClellan
QUADRANGLE: Centerpoint
SURFACE OWNER: Mary K. Post
ROYALTY OWNER: ***please see attachment #1
UTM GPS NORTHING: 4356041.47
UTM GPS EASTING: 530534.49
GPS ELEVATION: 1165'
The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements: 1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters. 2. Accuracy to Datum – 3.05 meters 3. Data Collection Method: Survey grade GPS: Post Processed Differential Real-Time Differential Real-Time Differential Real-Time Differential Real-Time Differential Real-Time Differential Real-Time Differential The undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas. Signature Date Title

PERSONNEL / PHONE LIST

Central District Team

Production Engineer Shawn Jackson Office: (405) 935-6276

Mobile (405) 365-9974

Completion Superintendent **Chad Satterfield** Office: (304) 517-1416 ext 86062

Mobile: (304) 203-8059

Production Superintendent Manny Johnson Office: (740) 695-1623 ext 87804

Mobile: (304) 641-0085

Land Man Randy Orsburn Office: (304) 517-1416 ext 86020

WV State Inspector Doug Newlon Cell: (304) 932-8049



Danielle Southall Regulatory Analyst II

November 21, 2013

Mr. Jeff McLaughlin WV Department of Environmental Protection Office of Oil & Gas 601 57th Street Charleston, WV 25304

Re: Plugging Permit for well 910160 API #47-017-00638

Dear Jeff:

Enclosed please find a Plugging Permit Application for the above captioned well. This well is situated on in McClellan District, Doddridge County, West Virginia.

If you have any questions or require additional information, please do not hesitate to contact me at (304) 517-1416 ext. 86024.

Sincerely,

Chesapeake Appalachia, LLC

Dee Southall

Enclosures

17 Mineral Owners

KATHERINE ANDRASIK

RUTH BOYCE

JENNINGS BOYCE
SHARON H JACKSON
MARY H WACKERMAN
JOANN FRIEND WHITE
RUTH HILL WORSTELL
ROBERTA YERKEY
CAROLYN LAVAUGHN HIGGINS
STEPHEN W BOYCE
JOSEPH A BOYCE
JAMES M BOYCE
WILLIAM E BOYCE
CLARENCE R STARKEY JR

DONNA R BUZZARD
CARL JOHNSON
DELMAN L HELMICK
MARY LOU LEMASTERS
JAMIES B BILDERBACK
BETTY L BATES
WILLIAM L BATES
LYLE COFFMAN
LYLE COFFMAN
BABBABA I STARKFY NICHOLS

BARBARA J STARKEY NICHOLSON CLIFF LOSEE

JOY LOSEE
ALICE A CRISS
JIMMY R ASHER
LINDA A WHYTE

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* Wallachment #1